Activity of Meropenem/RPX7009 and Comparator Agents Tested Against Contemporary Enterobacteriaceae Isolates Collected from Bloodstream Infections in USA Hospitals

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Background: Increasing reports of carbapenem-resistant Enterobacteriaceae (CRE) highlight the need for additional therapeutic options effective against these organisms. We evaluated the activity of meropenem/RPX7009 and comparator agents against contemporary Enterobacteriaceae isolates collected as part of a surveillance program in USA hospitals.

Methods: 854 Enterobacteriaceae isolates (clinical or research) were consecutively collected from BSI during 2014 in USA hospitals. CRE definitions were as per current EUCAST criteria. MIC values were determined using CLSI broth microdilution minimum inhibitory concentration (MIC) breakpoints to interpret susceptibilities to meropenem (MER) and RPX (fixed at 2 µg/ml) and comparator agents. Categorical interpretations for all comparator agents were defined according to CLSI guidelines. Each isolate was tested against bloodstream infection (BSI) isolates collected from USA hospitals. A total of 187 isolates were included in the study (one per patient episode). Only clinically significant isolates were included in the study (one per patient episode). The use of β-lactamase inhibitors RPX7009 and RPX (at fixed 8 µg/ml) was included in this study.

Results: MER/RPX inhibited 99.9% of the isolates at ≤1 µg/ml and 87.3% of the isolates at ≤0.25 µg/ml. Additionally, this compound displayed good activity against meropenem-resistant isolates (≥4 µg/ml) and meropenem/RPX MIC at 2 µg/ml and meropenem alone at 8 µg/ml.

Conclusions: MER/RPX demonstrated high activity against CRE BSI isolates collected in USA hospitals during 2014, and in further development warranted.

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